

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method of treating a surface of a substrate, the method comprising:
  - (a) forming hydroxyl groups on an oxide surface by exposing the oxide surface to a plasma; and
  - (b) reacting epoxy groups on gas-phase epoxy-functional molecules with the surface hydroxyl groups *in situ* in the absence of plasma and in the absence of acid and base catalysts to provide epoxy-terminated, surface-bound spacer chains.
2. (Previously Presented) The method of claim 1, further comprising immobilizing biomolecules on the oxide surface by reacting the biomolecules with the oxide surface-bound spacer chains.
3. (Original) The method of claim 2, wherein the biomolecules are amine-functionalized or amine-containing biomolecules.
4. (Original) The method of claim 1, wherein the oxide surface comprises a silicon oxide.
5. (Original) The method of claim 4, wherein the oxide surface comprises silica, glass or quartz.
6. (Original) The method of claim 1, wherein the oxide surface comprises a metal oxide.
7. (Original) The method of claim 6, wherein the metal oxide comprises a native oxide of stainless steel.
8. (Original) The method of claim 1, wherein the plasma is formed from a source gas comprising water, oxygen or a mixture thereof.
9. (Currently Amended) A method of treating a surface of a substrate, the method comprising:

- (a) forming hydroxyl groups on an oxide surface by exposing the oxide surface to a plasma;
- (b) reacting epoxy groups on epihalohydrin molecules with the surface hydroxyl groups *in situ* in the absence of plasma and in the absence of acid and base catalysts to provide a functionalized surface; and
- (c) exposing the functionalized surface to vacuum *in situ* to provide epoxy-terminated, surface-bound spacer chains.

10. (Original) The method of claim 9, wherein the epihalohydrin molecules are epichlorohydrin molecules.

11. (Original) The method of claim 1, wherein the epoxy-functional molecules are diepoxide molecules.

12. (Original) The method of claim 11, wherein the diepoxide molecules are 1,4-butanediol diglycidyl ether molecules.

13. (Original) The method of claim 2, wherein the biomolecule is selected from the group consisting of oligonucleotides, aptamers, cDNA and RNA.

14. (Original) The method of claim 2, wherein the biomolecule is a protein.

15. (Previously Presented) The method of claim 1, further comprising extending the spacer chains by reacting the spacer chains with gas-phase spacer molecules *in situ* in the absence of plasma to provide extended spacer chains.

16. (Original) The method of claim 15, wherein the spacer molecules comprise an amine group capable of reacting with the epoxy functionality of the spacer chains.

17. (Original) The method of claim 15, still further comprising immobilizing biomolecules on the extended spacer chains by reacting the biomolecules with the extended spacer chains.

18-33. (Cancelled)

34. (New) The method of claim 9, further comprising immobilizing biomolecules on the oxide surface by reacting the biomolecules with the oxide surface-bound spacer chains.

35. (New) The method of claim 9, further comprising extending the spacer chains by reacting the spacer chains with gas-phase spacer molecules *in situ* in the absence of plasma to provide extended spacer chains.